

REMARKS

Favorable reconsideration of this application as amended is respectfully requested.

The present invention provides a unique pulley support double row ball bearing critically dimensioned so that it is compact and lightweight and durable, and so that seal rings incorporated in the ball bearing are effective and durable, under severe operating conditions, to prevent foreign matter, such as muddy water, from entering the bearing. The prior art relied upon in the rejection under 35 U.S.C. § 103(a) does not teach or suggest this invention.

Claims 1 and 2 now recite a pulley support double row ball bearing having the following features:

- (1) an outer ring having an outer diameter of 65mm or less;
- (2) an axial width of the bearing that does not exceed 45% of an inner diameter of the inner ring; and
- (3) a portion of each seal ring near an inner circumference thereof and the corresponding axial end surface of the inner ring that overlap when viewed from the axial direction, so that a width in a radial direction of an overlap section is between 25% and 80% of a diameter of one of the plurality of balls of a diameter of 4mm or less.

Claim 3 now recites a pulley support double row ball bearing having the following features:

- (1) an outer ring having an outer diameter of 65mm or less;
- (2) an axial width of the bearing that does not exceed 45% of an inner diameter of the inner ring; and
- (3) each seal ring comprising an elastic material having a Shore hardness of 60 to 80 and reinforced by a metal core, the width in a radial direction of a deformed section of the elastic material that protrudes inward in the radial direction from an inner edge of the metal core is 40% or more than the diameter of one of the plurality of balls having a diameter of 4mm or less, and a thickness of a thinnest area of the deformed section, which is located in a middle in the radial direction of the deformed section, is between 0.4mm and 0.6mm.

It is apparent that in each of the independent claims an upper limit of a critical range has now been specified.

The features recited in the independent claims produce a pulley support double row ball bearing that is superior to the bearings disclosed in the references relied upon in the rejection under 35 U.S.C. § 103(a), whether considered individually or together. These features are critical to

the superior performance of the claimed invention. They do not result from mere routine skill in the art to discover optimum ranges.

The prior art has no recognition of the need for controlling a width of an overlap section, as specified in Claims 1 and 2, in a pulley support double row ball bearing in which an outer ring has an outer diameter of at most 65 mm and in which an axial width of the bearing does not exceed 45% of an inner diameter of the inner ring. The prior art has no recognition of the need for controlling dimensions of a deformed section of the elastic material of a seal ring in a pulley support double row having the small outer ring outer diameter and small axial width of the bearing recited in Claim 3.

Unlike the situation in *Aller*, which is a chemical case, the general conditions of the present claims are not disclosed in the prior art. The prior art does not disclose a compact double row ball bearing like Applicants' invention to start with.

Reducing the size and weight of prior art bearings, such as those disclosed in the references relied upon in the rejection, does not provide concomitant effective and durable seal performance. For example, if the bearings in the prior art are downsized, the width in the radial

direction of an overlap section and/or the width in the radial direction of a deformed section of the seal are not sufficiently ensured, which means that the seal performance is not sufficiently ensured, unlike the present invention.

There is no recognition in the prior art of the need for the features claimed to provide a pulley support double row ball bearing that is compact, lightweight, and durable and that has effective and durable seal performance.

The claims now presented clearly distinguish patentably from the prior art and should be allowed.

Accordingly, this application is now believed to be in condition for allowance.

The Commissioner is hereby authorized to charge to Deposit Account No. 50-1165 (XA-10245) any fees under 37 C.F.R. §§ 1.16 and 1.17 that may be required by this paper and to credit any overpayment to that Account. If any extension of time is required in connection with the filing of this paper and has not been separately requested, such extension is hereby requested.

Respectfully submitted,

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